WHAT IS CLAIMED IS:

1. A system for producing chemical cellulose pulp from comminuted fibrous cellulose material, comprising:

a steaming vessel in which comminuted fibrous cellulose material is steamed to remove the air therefrom;

a superatmospheric pressure vertical treatment vessel having an inlet for a slurry of comminuted cellulose fibrous material at a top portion thereof and an outlet at a bottom portion thereof;

pressurizing transfer means for pressurizing a slurry of material from the steaming vessel and transferring it to said treatment vessel inlet, said pressurizing transfer means consisting of one or more high pressure slurry pumps, each having an inlet and outlet, located below said top portion of said treatment vessel; and

means for circulating liquid from the outlet of at least one said high pressure slurry pump to the inlet thereof.

2. A system as recited in claim 1 further comprising a liquid return line from said top portion of said treatment vessel, said return line operatively connected to an inlet or outlet of one of said slurry pumps.

3. A system as recited in claim 2 further comprising a heat exchanger located in said return line.

4. A system as recited in claim 3 wherein said heat exchanger is a heat exchanger for cooling or heating the liquid in the return line.

5. A system as recited in claim 3 wherein said heat exchanger is a liquid-liquid indirect heat exchanger; and further comprising a source of

cool liquid connected to said heat exchanger, for cooling the liquid in said return line.

6. A system as recited in claim 1 further comprising a slurrying vessel having an inlet operatively connected to said steaming vessel and an outlet operatively connected to the inlet of said one or more slurry pumps.

7. A system as recited in claim 6 further comprising a liquid return line from said top portion of said treatment vessel, said return line operatively connected to said slurry vessel.

8. A system as recited in claim 7 further comprising a heat exchanger located in said return line.

9. A system as recited in claim 8 wherein said heat exchanger is an indirect heat exchanger for cooling or heating the liquid in the return line.

10. A system as recited in claim 1 wherein said at least one pump comprises at least two pumps.

11. A system as recited in claim 10 wherein each of said pumps has a said circulation means.

12. A system as recited in claim 1 wherein said circulation means comprises a conduit having a first valve therein, and further comprising a second valve between said pump outlet and said treatment vessel.

13. A method as recited in claim 11 wherein each of said

circulation means comprises a conduit having a first valve therein, and further comprising a second valve between said pump outlet and said treatment vessel.

14. A system as recited in claim 10 wherein said treatment vessel comprises a first vessel, and further comprising a second treatment vessel; a main conduit connected to said outlet of said at least one pump; a static flow splitter having an inlet and at least two outlets; said main conduit connected to said flow splitter inlet; and one of said flow splitter outlets connected to said first treatment vessel and another outlet to said second treatment vessel.

15. A system as recited in claim 14 wherein said flow splitter comprises a chamber having a substantially triangular shaped static baffle plate arrangement with a triangle apex substantially aligned with said inlet.

16. A method of feeding comminuted cellulosic fibrous material to the top of a treatment vessel comprising the steps of:

(a) steaming the comminuted cellulosic fibrous to remove air therefrom and to heat the material;

(b) slurrying the comminuted cellulosic fibrous material with a cooking liquor to produce a slurry of liquid and material; and

(c) pressurizing the slurry at a location at least thirty feet below the top of the treatment vessel and transferring pressurized material to the top of the treatment vessel, said pressurizing step consisting of acting on the slurry with two or more high pressure slurry pumps.

17. A method of feeding comminuted cellulosic fibrous material to the top of a treatment vessel, comprising:

(a) steaming the material to remove air therefrom and to heat the

material;

(b) slurrying the material with a cooking liquor to produce a slurry of liquid and material;

(c) pressurizing the slurry at a location at least thirty feet below the top of the treatment vessel and transferring pressurized material to the top of the treatment vessel, said pressurizing step consisting of acting on the slurry with one or more high pressure slurry pumps; and

(d) establishing a recirculation loop between the pump outlet and inlet during startup.

18. A method as recited in claim 17 wherein a first valve is provided in the recirculation loop and a second valve between the pump outlet and the treatment vessel; and wherein (d) is practiced to open the first valve and at least partially close the second valve during startup; and further comprising: (e) after startup closing the first valve and opening the second valve.

19. A method as recited in claim 17 further comprising (e) returning liquid from the treatment vessel to the pump inlet, and (f) positively cooling the returning liquid so that it has a temperature below the point at which it will flash during handling.

20. A method as recited in claim 17 further utilizing a second treatment vessel; and further comprising (e) statically splitting the flow of liquid from the outlet of the last of the pumps to direct part of the flow to each treatment vessel.

21. A method as recited in claim 16 (d) establishing a recirculation loop between each pump outlet and inlet during startup.

22. A method as recited in claim 21 wherein a first valve is provided in each recirculation loop and a second valve between each pump outlet and each treatment vessel; and wherein (d) is practiced to open each first valve and at least partially close each second valve during startup; and further comprising: (e) after startup closing each first valve and opening each second valve.

23. A method as recited in claim 16 further comprising (e) returning liquid from the treatment vessel to the pump inlet, and (f) positively cooling the returning liquid so that it has a temperature below the point at which it will flash during handling.